

## **ABSTRACT**

A system and method of producing an output sound field that is representative of an input sound field compatible with both existing prior art sound reproduction systems, for example ITU 5.1/6.1, and with a three-dimensional reproduction system unique to this disclosure. One embodiment of the disclosed system is comprised of a microphone array, an encoder, a decoder, and a plurality of speakers, some of which may not be located in the plane of the listener. A further embodiment discloses matrices to encode and decode the signals representative of the input and output sound fields respectively.